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**Laboratory Evaluations
of Candidate Insecticide Residues
Against Face Flies and DDT-Resistant House Flies,
1961-1969**

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Production Research Report No. 132

**Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE**

Laboratory Evaluations of Candidate Insecticide Residues Against Face Flies and DDT-Resistant House Flies, 1961-1969

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In 1960 the face fly (*Musca autumnalis* De Geer) became a serious pest of cattle and horses in central Maryland for the first time. Research undertaken that year on this insect at the Agricultural Research Center, Beltsville, Md., consisted of laboratory rearing studies and field tests with insecticides and repellents (3, 4).¹

The following year laboratory evaluations of insecticide residues against this insect were begun. The same candidate materials were also tested against DDT-resistant house flies (*Musca domestica* L.).

TEST PROCEDURES

The method used to test face and house flies was a modification of the residue jar method described for use with cockroaches (5) and later for house flies (1). This is the same method used for residual tests on face flies (2).

The insecticides were made up in acetone solutions at a concentration of 0.56 mg. per milliliter. The solutions were applied to the entire neck of a pint Mason jar with a pipette and allowed to run down into the jar. As the jar was gently rotated by hand the acetone evaporated and all interior surfaces were evenly coated.

In early tests 5 ml. of the solution were used in the jars resulting in a residue of 10 mg. per 929 cm.² In later tests the beginning dosage was 5 mg. per 929 cm.², which was obtained by using 2.5 ml. of the 0.56-mg. stock solution. Since it was impossible to coat the surface of the jar evenly with less than 2.5 ml., lower dosages were obtained by diluting the stock solutions to obtain the desired dosage when using either 5 or 2.5 ml. of the solution.

A cover of 94-cm.² double-weight window glass was treated on one side at the same dosage as the jar. This was obtained by using the same dilution and treating the cover with 1.75 ml. when 5 ml. were used in the jar and 0.875 ml. when 2½ ml. were used.

Insofar as possible the insects were 3 to 5 days old on a given day of testing. One or two hours after the acetone was evaporated, 20 or more adult flies were selected at random through the opening in the rubber back of a stock cage by means of a shell vial. They were then transferred to a treated jar by first covering it with a piece of cardboard containing an opening of the same diameter as the vial used to catch the flies. The open end of the vial was inserted through the hole in the cardboard and the flies were shaken into the jar. As the cardboard was removed the window-glass cover was quickly slipped over the jar with the treated side covering the mouth.

The jar was inverted on a table for 5 minutes, during which the insects were in continual contact with the treated surface except for occasional flight. Inversion of the jar was necessary since the face flies particularly tended to congregate on the jar lip, which had been difficult to treat. At the end of the exposure period the insects were placed in a 10-inch cubical screen holding cage.

All insects were fed with cotton soaked in a skim milk and water solution (1:1). They were held overnight for mortality counts. Both dead and living insects were sexed, and the percent mortality was recorded for males, females, and the total population. No attempt was made to determine whether some insects may have been killed by fumigation.

When tests were replicated, freshly treated jars and different populations of insects were used. Be-

¹ Italic numbers in parentheses refer to Literature Cited, p. 3.

cause of limited equipment, space, and time, all materials could not be tested on the same day. DDT and malathion were included at each level as a standard against face flies and resistant house flies, respectively. Only the more promising materials were tested at lower dosages.

RESULTS

In table 1, 281 materials are evaluated as insecticide residues against face flies and DDT-resistant house flies. Approximately one-third of the materials tested were equal to or better than their respective standards when compared at the dosage level most closely approximating the LD_{50} —1.25 mg. of DDT against face flies and 5 mg. of malathion against resistant house flies.

The most effective materials against the face fly, based on 100-percent kill with a residue of 0.312 mg. per 929 cm.² or less, were as follows:

<i>Residue (mg.)</i>	<i>Item No.</i>
0.039 -----	84, 121 (isobenzan)
0.156 -----	75 (crotoxyphos), 159, 160, 165, 245 (phoxim)
0.312 -----	2, 107 (Bomyl®), 163, 164, 166, 180, 181, 217, 218, 224 (bromophos), 229, 231, 233, 247 (Dursban®), 255, 271, 272

The most effective materials against DDT-resistant house flies, based on 100-percent kill with a residue of 0.312 mg. per 929 cm.², were items 75 (crotoxyphos), 83, 84, 166, and 272.

The most effective materials against both species were items 75 (crotoxyphos) and 84.

LITERATURE CITED

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1962. RESIDUAL TESTS ON FACE FLIES. Soap and Chem. Spec. 38 (5): 125-128.
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1961. EXPERIMENTS ON CONTROL OF THE FACE FLY. Jour. Econ. Ent. 54: 1147-1151.
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1956. COCKROACH CONTROL. Pest Control 24 (9): 12, 14, 17, 19, 20.

This publication reports research involving pesticides. It does not contain recommendations for their use, nor does it imply that the uses discussed here have been registered. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.



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Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level

Entomology			24-hour kill						
Item No.	No. (ENT-)	Material	Residue Mg. per 929 cm. ²	Face fly		Total	House fly		Total
				Male	Female	insects	Male	Female	insects
				Percent	Percent	Percent	Percent	Percent	Percent
CANDIDATE MATERIALS									
1	27509	Acetic acid, mercapto-, 2,2-dimethylhydrazide, <u>O</u> -ethyl ethylphosphonodithioate (ester)	5.0	62	38	47	55	27	43
2	27386	Acetic acid, mercaptophenyl-, ethyl ester, <u>S</u> -ester with <u>O</u> , <u>O</u> -dimethyl phosphorodithioate	5.0	100	100	100	89	68	79
			2.5	100	100	100	74	54	64
			1.25	100	100	100	64	43	50
			.625	100	93	96	52	10	35
			.312	100	100	100	72	52	63
			.156	36	8	19	6	0	4
			.078	11	5	8	0	0	0
3	27411	Acetimidic acid, <u>N</u> -(carbamoyl-oxy)thio-, methyl ester	5.0	95	18	54	50	50	50
			2.5	27	8	15	17	12	15
4	27553	Acetimidic acid, <u>N</u> -[(methyl-carbamoyl)oxy]-, ethyl ester	10.0	100	100	100	100	100	100
			5.0	100	100	100	100	100	100
			2.5	100	100	100	100	92	94
			1.25	100	100	100	100	100	100
			.625	100	90	96	100	73	85
			<u>1/</u> .312	63	40	50	75	20	50
			.156	65	14	42	41	9	19
5	28464	Acetoacetamide, <u>N</u> -piperonyl-	5.0	0	0	0	0	0	0
6	27029	Acetophenone, 4'-nitro-, <u>O</u> -(phosphonothio)oxime, diethyl ester	5.0	28	48	37	0	0	0
<hr/>									
7	16275	<u>trans</u> -(+)-Allethrin	5.0	100	100	100	100	91	97
			2.5	100	100	100	100	48	75
			1.25	50	55	53	85	28	47
			.625	45	58	51	20	0	10
			.312	47	43	45	9	0	3
8	27377	Benzaldehyde, 2,4-dichloro-, <u>O</u> -2-propynyloxime	5.0	4	3	3	0	0	0
9	27140	3-Biphenylcarboxanilide, 2'',4',5,5''-tetrachloro-2-hydroxy-	5.0	9	0	4	0	0	0
10	27137	3-Biphenylcarboxanilide, 2'',4'',5,5''-tetrachloro-2-hydroxy-	5.0	0	0	0	0	0	0
11	27135	3-Biphenylcarboxanilide, 2'',5,5''-trichloro-2-hydroxy-	5.0	0	0	0	0	0	0
12	27136	3-Biphenylcarboxanilide, 3'',4'',5-trichloro-2-hydroxy-	5.0	0	0	0	0	0	0
13	27139	3-Biphenylcarboxanilide, 4',4'',5-trichloro-2-hydroxy-	5.0	0	3	2	0	0	0
14	27514	1,4-Butanediol, cyclic sulfite	5.0	0	0	0	0	0	0
15	9735	Camphene, chlorinated to contain 67-69 percent chlorine	<u>2/</u> 10.0 <u>1/</u> 5.0	70 20	65 7	69 13	73 24	60 10	65 18
16	27046	Carbamic acid, 2-[(mercapto-methyl)thio]ethyl ester, <u>S</u> -ester with <u>O</u> -isopropyl <u>O</u> -methyl phosphorodithioate	5.0	82	46	71	0	0	0
			2.5	33	28	27	23	0	10
17	27264	Carbamic acid, acetylmethyl-, <u>m</u> - <u>tert</u> -butylphenyl ester	5.0	0	0	0	7	0	4
18	27262	Carbamic acid, acetylmethyl-, 6-chloro-3,4-xylyl ester	5.0	0	0	0	4	0	2

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm.2	24-hour kill					
				Face fly		Total insects	House fly		Total insects
				Male Percent	Female Percent		Male Percent	Female Percent	
19	27468	Carbamic acid, acetylmethyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	10.0 5.0 2.5 1.25 .625	100 90 100 67 65	95 88 85 92 36	97 89 89 80 48	100 86 75 88 21	81 21 14 11 0	89 43 28 44 14
20	27263	Carbamic acid, acetylmethyl-, 4-(dimethylamino)-3,5-xylyl ester	5.0	65	33	47	22	0	12
21	27457	Carbamic acid, (chloroacetyl)-methyl-, <u>m</u> -tert-butylphenyl ester	5.0	0	5	3	17	8	13
22	27334	Carbamic acid, (chloroacetyl)-methyl-, <u>m</u> -cumenyl ester	5.0	45	17	30	37	10	29
23	27456	Carbamic acid, (chloroacetyl)-methyl-, <u>m</u> -tolyl ester	5.0	0	0	0	0	6	5
24	33264	Carbamic acid, dibutyl-, <u>p</u> -bromophenyl ester	5.0	11	0	3	5	3	4
25	33176	Carbamic acid, di-sec-butylthio-, <u>S</u> -phenyl ester	5.0	0	0	0	6	0	4
26	27459	Carbamic acid, (dichloroacetyl)methyl-, <u>m</u> -tert-butylphenyl ester	5.0	0	0	0	0	11	7
27	27455	Carbamic acid, (dichloroacetyl)methyl-, <u>m</u> -cumenyl ester	5.0 2.5	0 7	0 0	0 4	75 7	56 0	61 2
28	27376	Carbamic acid, dimethyl-, benzo[b]thien-4-yl ester	5.0 2.5	100 40	100 59	100 26	49 5	77 7	12 4
29	25922	Carbamic acid, dimethyl-, ester with 3-hydroxy-N,N,5-trimethylpyrazole-1-carboxamide (dimetilan)	5.0 2.5 1.25 .625 .312	100 100 85 95 42	100 98 58 56 22	100 99 68 73 37	100 47 60 28 4	89 7 10 2 0	94 18 30 18 2
30	33158	Carbamic acid, dimethylthio-, <u>S</u> -(<u>p</u> -bromophenyl) ester	5.0	0	0	0	0	0	0
31	33223	Carbamic acid, ethyldithio-, phenyl ester	5.0	0	0	0	3	4	0
32	27460	Carbamic acid, (mercaptoacetyl)-methyl-, <u>o</u> -tolyl ester, <u>S</u> -ester with <u>O</u> , <u>O</u> -dimethyl phosphorodithioate	5.0 2.5	0 4	0 0	0 2	83 48	28 0	50 24
33	25801	Carbamic acid, (2-mercaptoethyl)-, ethyl ester, <u>S</u> -ester with <u>O</u> , <u>O</u> -dimethyl phosphorodithioate	5.0 2.5	41 27	63 54	17 9	82 30	98 63	65 4
34	27362	Carbamic acid, methyl-, 1,4-benzodioxan-5-yl ester	5.0	23	28	19	3	4	2
35	27041	Carbamic acid, methyl-, benzo[b]thien-4-yl ester (Mobam ^(R))	3/ 4/ 5.0	39	38	37	34	31	33
36	27128	Carbamic acid, methyl-, 5-sec-butyl-2-chlorophenyl ester	5.0	24	27	26	0	3	2
37	25911	Carbamic acid, methyl-, 5-tert-butyl-2-chlorophenyl ester	5.0	6	0	3	6	0	3
38	27212	Carbamic acid, methyl-, <u>o</u> -sec-butylphenyl ester	5.0	41	17	30	8	3	5
39	27382	Carbamic acid, methyl-, 4-chloro-2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	5.0	13	14	11	11	14	3

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly		House fly			
				Male	Female	Total insects	Male	Female	Total insects
				Percent	Percent	Percent	Percent	Percent	Percent
40	27649	Carbamic acid, methyl-, 2-chloro- <u>m</u> -tolyl ester	5.0	23	2	10	6	3	4
41	25543	Carbamic acid, methyl-, <u>m</u> -cumenyl ester	3/10.0 1/ 5.0 1/ 2.5	100 98 72	98 88 68	99 93 70	47 0 4	18 0 0	32 0 2
42	27300	Carbamic acid, methyl-, <u>m</u> -cym-5-yl ester	5.0 2.5	71 14	69 28	69 21	31 38	5 2	22 23
43	27109	Carbamic acid, methyl-, 4-(diallylamino)-3,5-xylyl ester	5.0	5	20	11	0	5	3
44	27164	Carbamic acid, methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (carbofuran)	5.0 2.5 1.25	81 84 32	94 100 22	88 91 26	83 12 2	18 0 0	44 4 1
45	27324	Carbamic acid, methyl-, 2,3-dihydro-2-methyl-7-benzofuranyl ester	5.0 2.5	71 14	47 17	56 15	84 31	20 0	61 17
46	27383	Carbamic acid, methyl-, 2,3-dihydro-2,2,4-trimethyl-7-benzofuranyl ester	5.0 2.5 1.25 .625	89 76 66 0	91 81 70 0	86 73 60 0	53 12 16 0	83 20 27 0	8 0 6 0
47	25780	Carbamic acid, methyl-, 3,5-diisopropylphenyl ester	5.0 2.5 1.25	80 100 12	65 100 0	72 100 6	17 79 11	6 58 0	12 70 7
48	27305	Carbamic acid, methyl-, 4-[[[(dimethylamino)methylene]amino]- <u>m</u> -tolyl ester	5.0	18	26	23	59	30	41
49	27466	Carbamic acid, methyl-, <u>o</u> -(dimethylamino)phenyl ester	10.0 5.0	79 6	50 0	62 3	67 82	14 15	47 39
50	27108	Carbamic acid, methyl-, 3-(dimethylamino)- <u>p</u> -tolyl ester	5.0	12	6	9	0	0	0
51	27385	Carbamic acid, methyl-, 2,2-dimethyl-8-chromanyl ester	5.0	25	19	30	4	3	5
52	27410	Carbamic acid, methyl-, <u>o</u> -(4,5-dimethyl-1,3-dioxolan-2-yl)phenyl ester	5.0 2.5	97 39	89 28	93 32	97 45	91 6	94 28
53	27524	Carbamic acid, methyl-, 1,1-dimethyl-4-indanyl ester	5.0	0	0	0	0	0	0
54	27480	Carbamic acid, methyl-, ester with 4'-hydroxyacetanilide	5.0	13	10	12	8	3	5
55	27369	Carbamic acid, methyl-, ester with <u>p</u> -hydroxyhydrocinnamionitrile	5.0	6	5	7	0	0	0
56	27397	Carbamic acid, methyl-, ester with (<u>p</u> -hydroxyphenyl)acetonitrile	5.0	0	4	3	0	0	0
57	27481	Carbamic acid, methyl-, ester with 3'-hydroxypropionanilide	5.0	54	36	44	51	35	46
58	25671	Carbamic acid, methyl-, <u>o</u> -isopropoxyphenyl ester (propoxur)	5.0 2.5	57 10	83 3	73 6	30 0	0 0	19 0
59	27695	Carbamic acid, methyl-, 2,3-(isopropylidenedioxy)phenyl ester	5.0 2.5 1.25 .625	87 100 83 70	59 80 50 23	67 84 62 39	67 48 17 75	18 0 17 15	49 16 17 27

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly			House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent	Total insects Percent
60	27047	Carbamic acid, methyl-, 2-[(mercaptomethyl)thio]ethyl ester, S-ester with O-isopropyl O-methyl phosphorodithioate	5.0	0	0	0	4	0	3
61	27384	Carbamic acid, methyl-, 7-methylbenzo[b]thien-4-yl ester	5.0	0	0	0	7	3	12
62	27127	Carbamic acid, methyl-, m-(1-methylbutyl)phenyl ester (Chevron RE-5353)	5.0	0	6	3	0	12	8
63	27564	Carbamic acid, methyl-, o-(4-methyl-1,3-dioxolan-2-yl)-phenyl ester	5.0	41	6	15	35	0	22
64	27407	Carbamic acid, methyl-, 2-methyl-8-quinolyl ester	5.0	0	0	0	3	0	2
65	27557	Carbamic acid, methyl-, 2-methyl-8-quinolyl ester, sulfate (1:1)	5.0	7	0	3	71	9	48
66	23969	Carbamic acid, methyl-, 1-naphthyl ester (Carbaryl)	5.0	0	0	0	5	0	3
67	27479	Carbamic acid, methyl-, 8-quinolyl ester	10.0	12	5	9	0	0	0
68	27253	Carbamic acid, methyl-, 5,6,-7,8-tetrahydro-1-naphthyl ester	5.0	0	0	0	0	0	0
69	27347	Carbamic acid, methylnitroso-, m-cumenyl ester	5.0	0	0	0	5	4	5
70	27458	Carbamic acid, methyl(tri-chloroacetyl)-, m-tert-butylphenyl ester	5.0	0	0	0	7	6	6
71	27454	Carbamic acid, methyl(tri-chloroacetyl)-, m-cumenyl ester	5.0	0	0	0	54	21	30
72	27573	Carbamic acid, thio-, S,S'-2'-(dimethylamino)trimethylene ester, hydrochloride	10.0	0	0	0	1	0	1
73	33221	Carbanilic acid, m-chlorophenyl ester	5.0	0	0	0	5	6	4
74	31544	Carbanilic acid, o-methyl-dithio-, methyl ester	5.0	0	0	0	0	4	3
75	24717	Crotonic acid, 3-hydroxy-, α-methylbenzyl ester, dimethyl phosphate, (E)-(crotoxypfos)	10.0 5.0 2.5 1.25 .625 .312 .156 .078 .039	100 100 100 100 100 100 100 89 22	100 100 100 100 100 100 100 81 0	100 100 100 100 100 100 100 84 18	100 100 100 100 100 100 100 12 0	100 100 100 100 100 100 100 0 0	100 100 100 100 100 100 100 7 0
76	27517	1,2-Cyclohexanediol, cyclic sulfite, trans-	5.0	0	0	0	0	0	0
77	27540	1,2-Cyclohexanediol, 1,2-dimethyl-, cyclic sulfite	10.0	0	21	8	2	0	1
78	27304	Cyclohexanone, 2-methyl-2-nitro-, O-(methylcarbamoyl)-oxime	5.0	0	8	3	4	0	2

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill						
			Residue	Face fly			House fly		
				Male	Female	Total insects	Male	Female	Total insects
			Mg. per 929 cm. ²	Percent	Percent	Percent	Percent	Percent	Percent
79	27462	1-Cyclopentene-1-carboxylic acid, 2-hydroxy-, methyl ester, dimethyl phosphate	5.0 2.5	38 0	0 0	20 0	69 18	52 0	57 8
80	27085	Cyclopropane, 1,1-dichloro-2,2-bis(p-chlorophenyl)-	5.0	56	32	44	84	4	53
81	27233	Cyclopropanecarboxylic acid, methyl ester	5.0	0	0	0	0	0	0
82	27561	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, p-allylbenzyl ester	5.0 2.5 1.25 .625	96 71 0 14	100 50 0 0	98 63 0 5	100 100 100 21	100 100 100 0	100 100 100 14
83	27474	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, (5-benzyl-3-furyl)methyl ester	5.0 2.5 1.25 .625 .312 .156 .078 .039	100 100 100 21 76 7 0 0	100 100 97 4 35 0 4 4	100 100 98 11 60 4 3 3	100 100 100 100 100 95 97 0	100 100 100 100 100 85 88 0	100 100 100 100 100 91 93 0
84	27662	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, (5-benzyl-3-furyl)methyl ester, (+)-trans-	5.0 2.5 1.25 .625 .312 .156 .078 .039 .020 .010	100 100 100 98 88 100 95 100 96 0	100 100 100 93 93 100 92 100 88 0	100 100 100 96 90 100 94 100 91 0	100 100 100 100 100 96 92 35 0 0	100 100 100 100 100 97 74 20 0 0	100 100 100 100 100 97 82 33 0 0
85	21195	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-bromopiperonyl ester	1/10.0 2/ 5.0 2/ 2.5 2/ 1.25	96 100 100 34	95 100 98 12	96 100 98 24	98 44 56 2	96 12 20 3	97 31 45 2
86	21557	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 6-chloropiperonyl ester (barthrin)	1/10.0 1/ 5.0 1/ 2.5 1/ 1.25 1/ .625	100 100 100 96 6	100 100 100 87 0	100 100 100 93 4	100 100 82 12 0	100 90 40 5 0	100 94 70 8 0
87	21170	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, 2,4-dimethylbenzyl ester (dimethrin)	1/10.0 2/ 5.0 2/ 2.5 2/ 1.25	100 100 96 4	98 100 83 0	99 100 89 2	98 40 19 0	92 12 6 0	97 28 12 0
88	27339	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, ester with N-(hydroxymethyl)-1-cyclohexene-1,2-dicarboximide (tetramethrin)	5.0 2.5 1.25 .625	100 97 95 30	96 95 87 29	98 96 91 30	84 16 14 0	54 10 4 0	72 14 9 0
89	21559	Cyclopropanecarboxylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, o-methylbenzyl ester	1/10.0 1/ 5.0	96 92	98 44	96 73	57 4	50 0	50 2
90	27199	Decanoic acid, 2-bromo-, 2-propynyl ester	5.0	0	0	0	0	0	0
91	27532	Decylamine, N,N-diethyl-	5.0	8	0	4	0	0	0
92	27531	Decylamine, N,N-dimethyl	5.0	0	0	0	0	0	0
93	27530	Decylamine, N-methyl-	5.0	0	0	0	0	0	0
94	17251	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo-endo-(endrin)	2/10.0 1/ 5.0 1/ 2.5 1/ 1.25	98 100 100 60	97 84 100 56	98 94 100 58	95 76 76 53	87 73 34 28	93 74 52 44

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly			House fly		
				Male	Female	Total	Male	Female	Total
				Percent	Percent	Percent	Percent	Percent	Percent
95	16225	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 6,7-epoxy-1,4,4a,5,6,7,8,8a- octahydro-, <u>endo-exo</u> - (dieldrin)	<u>2</u> /10.0 <u>1</u> / 5.0 <u>1</u> / 2.5 <u>1</u> / 1.25 <u>1</u> / .625 <u>1</u> / .312 <u>1</u> / .156	100 100 100 100 91 90 77	100 100 100 100 92 86 36	100 100 100 100 92 88 68	83 55 44 68 54 22 13	48 44 56 62 58 26 27	66 50 55 70 54 23 20
96	27022	Disulfide, diethoxyphosphinyl 1-ethoxy-N-phenylformimidoyl	5.0 2.5 1.25	100 89 56	100 93 45	100 92 52	76 90 12	17 24 0	45 56 5
97	27027	Disulfide, diethoxyphosphinyl 1-ethoxy-N-propylformimidoyl	5.0 2.5 1.25	76 100 2	67 100 0	70 100 1	89 76 0	20 23 0	47 43 0
98	27026	Disulfide, diethoxyphosphinyl 1-isopropoxy-N-phenylform- imidoyl	5.0 2.5 1.25	94 56 0	99 65 0	97 60 0	57 62 0	3 0 0	27 29 0
99	27025	Disulfide, diethoxyphosphinyl 1-methoxy-N-phenylformimidoyl	5.0 2.5	43 0	52 4	47 2	0 0	0 0	0 0
100	27696	1,3-Dithiolane-2-carbox- aldehyde, 2,4-dimethyl-, O-(methylcarbamoyl)oxime	5.0	44	27	32	2	3	3
101	27660	1,3-Dithiolane-2-carbox- aldehyde, 2-methyl-, O-(methylcarbamoyl)oxime	5.0	28	32	30	0	0	0
102	26661-X	Dodecanamide, N,N-dimethyl- (95 percent), mixture with related amides (5 percent)	5.0	0	0	0	0	0	0
103	17082	Ethane, 1,1-dichloro-2,2- bis(p-ethylphenyl)- (Perthane (R))	<u>1</u> /10.0 <u>2</u> / 5.0 <u>2</u> / 2.5	99 95 64	99 86 40	99 90 55	88 28 12	75 19 4	80 22 8
104	1716	Ethane, 1,1,1-trichloro-2,2- bis(p-methoxyphenyl)- (methoxychlor)	<u>2</u> /10.0 <u>1</u> / 5.0 <u>1</u> / 2.5	80 84 2	70 74 0	75 75 1	70 0 0	42 0 4	56 0 1
105	25456	Ether, bis(2,3,3,3-tetrachloro- propyl)	<u>2</u> /10.0	61	64	64	81	49	64
106	27359-X	Fatty oil, mixture with hexadecanol, sodium chloride, acetic acid and benzene	5.0	0	0	0	0	0	0
107	24833	Glutaconic acid, 3-hydroxy-, dimethyl ester, dimethyl phosphate (Bomyl(R))	5.0 2.5 1.25 .625 .312 .156	100 100 100 40 100 4	100 100 100 62 100 0	100 100 100 54 100 3	100 100 80 0 0 0	100 100 18 0 9 0	100 100 48 0 6 0
108	24703	Imidazole	10.0	0	2	1	0	0	0
109	44607-X	Iron, tricarbonyl(octadeca- dienoic acid)-, methyl ester	5.0	21	3	8	2	0	1
110	3484	Lauric acid, 2-chloroethyl ester	5.0	0	0	0	0	0	0
111	44652	<u>Melia azadirachta</u> L. alcohol extract of fruit	5.0	0	0	0	4	0	2
112	44653	<u>Melia azadirachta</u> L. ether soluble portion of 44652	5.0	4	0	2	3	3	3
113	44654	<u>Melia azadirachta</u> L. solid from 44653	5.0	5	0	2	37	4	24
114	27538	p-Menthan-2-one	5.0	5	0	3	0	0	0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill						
			Residue	Face fly		Total insects	House fly		Total insects
				Male	Female		Male	Female	
			Mg. per 929 cm. ²	Percent	Percent	Percent	Percent	Percent	Percent
115	27539	p-Menth-8-ene-1,2-diol, cyclic sulfite	5.0	0	0	0	0	0	0
116	27537	p-Menth-3-en-2-one	5.0	0	0	0	0	0	0
117	27005	4,7-Methanoindan, 1,2,3,- 4,5,6,7,8,8-nonachloro- 3a,4,7,7a-tetrahydro-	5.0	9	0	4	40	0	10
118	25960	4,7-Methanoindene, 1-bromo-	5.0	100	100	100	93	74	85
		4,5,6,7,8,8-hexachloro-	2.5	100	100	100	94	74	81
		3a,4,7,7a-tetrahydro-	1.25	100	100	100	88	25	60
			.625	44	0	26	(insects escaped)		
119	15152	4,7-Methanoindene, 3a,4,5,- 6,7,8,8-heptachloro-3a,4,- 7,7a-tetrahydro- (heptachlor)	2/10.0	100	100	100	96	92	93
			1/ 5.0	100	100	100	76	73	75
			1/ 2.5	100	100	100	82	62	70
			1/ 1.25	94	100	96	50	32	44
			1/ .625	92	83	88	56	32	48
			1/ .312	36	46	37	32	3	16
120	9932	4,7-Methanoindene, 1,2,4,5,- 6,7,8,8-octachloro-2,3,3a,4,- 7,7a-hexahydro- (chlordane)	2/10.0	98	100	98	76	65	70
			1/ 5.0	100	89	96	56	55	55
			1/ 2.5	100	100	100	55	40	45
			1/ 1.25	95	95	95	62	51	60
			1/ .625	74	46	65	32	20	28
			1/ .312	0	12	3	0	0	0
121	25545	4,7-Methanoisobenzofuran, 1,3,4,5,6,7,8,8-octachloro- 1,3,3a,4,7,7a-hexahydro- (isobenzan)	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			1/1.25	100	100	100	100	82	90
			.625	100	100	100	92	94	93
			.312	100	95	97	84	38	63
			.156	100	95	98	90	83	85
			.078	100	97	99	71	23	58
			.039	100	100	100	67	9	35
			.020	0	0	0	0	0	0
		122	27515	4,7-Methanoisobenzofuran- 1(3H)-one, 3a,4,7,7a- tetrahydro-3,3-dimethyl-	5.0	0	0	0	0
123	27017-X	1,4-Methanonaphthalene, 1,2,3,4,9,9-hexachloro- 1,4,4a,5,6,7,8,8a-octa- hydro-, chlorinated to contain approximately 72 percent chlorine	5.0	3	11	7	0	0	0
124	27154	1,3,4-Metheno-1H-cyclobuta- [cd]pentalene-2-levulinic acid, 1,1a,3,3a,4,5,5,5a,5b,6- decachlorooctahydro-2-hydroxy-, ethyl ester	5.0	0	0	0	3	0	2
125	27198	Morpholine, 4-(2-bromode- canoyl)-	5.0	0	0	0	0	0	0
126	27196	Morpholine, 4-(2-decenoyl)-	5.0	0	0	0	0	0	0
127	27197	Morpholine, 4-(2-dodecenoyl)-	5.0	0	0	0	0	0	0
128	27195	Morpholine, 4-(2-nonenoyl)-	5.0	0	0	0	0	0	0
129	27194	Morpholine, 4-(2-octenoyl)-	5.0	0	0	0	0	0	0
130	27301	2-Norbornanone, 3-methyl-3- nitro-, 0-(methylcarbamoyl)- oxime	5.0	0	6	2	0	0	0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly		House fly		Total	
				Male	Female	Male	Female	Male	Female
				Percent	Percent	Percent	Percent	Percent	Percent
131	27053	2-Norbornene, 1,2,3,4,7,7-hexachloro-5,6-bis(chloromethyl)-	5.0	3	6	4	33	9	20
132	23447	2-Norbornene, 1,2,3,4,7,7-hexachloro-5-(dichloromethyl)-	1/10.0 2/ 5.0 2/ 2.5 2/ 1.25	99 100 100 94	100 100 100 65	99 100 100 78	64 40 40 10	57 54 26 10	60 47 32 10
133	26660-X	Octanamide, N,N-dimethyl- (50 percent), mixture with N,N-dimethyldecanamide (40 percent) and related amides (10 percent)	5.0	0	0	0	0	0	0
134	26663-X	Oleamide, N,N-dimethyl- (80 percent), mixture with related amides (20 percent)	5.0	0	0	0	0	0	0
135	27536	2,4-Pentandiol, cyclic sulfite, (+)-	5.0	0	0	0	0	0	0
136	27535	2,4-Pentandiol, cyclic sulfite, meso-	5.0	0	0	0	0	0	0
137	27400	2-Pentenoic acid, 2,3,5,5,5-pentachloro-4-oxo-, (Z)-	5.0	0	0	0	0	3	2
138	27401	2-Pentenoic acid, 2,3,5,5,5-pentachloro-4-oxo-, phenyl ester	5.0	0	0	0	0	0	0
139	27463	3-Penten-2-one, 4-methyl-, O-(methylcarbamoyl)oxime, (Z)-	5.0	0	3	2	33	24	26
140	27518	O-Phenylenediamine, N,N'-diethyl-	5.0	0	0	0	0	0	0
141	27011	Phosphonic acid, [(phenyldithio)methylidene]tri-, hexaethyl ester	5.0 2.5 1.25	100 97 5	100 91 0	100 93 2	23 6 0	0 0 0	11 3 0
142	27251	Phosphonodithioic acid, ethyl-, S-(p-tert-butylphenyl) O-methyl ester	5.0 2.5 1.25	100 100 47	100 100 0	100 100 22	100 100 95	93 86 45	98 90 72
143	27632	Phosphonodithioic acid, ethyl-, S-(p-chlorophenyl) O-isobutyl ester	5.0 2.5 1.25 .625 .312	100 100 100 75 -	100 100 100 56 -	100 100 100 66 36	100 92 78 8 11	86 40 43 6 0	93 63 64 7 7
144	27045	Phosphonodithioic acid, ethyl-, S-(4-chloro-m-tolyl) O-ethyl ester	5.0 2.5 1.25	100 100 92	100 100 21	100 100 44	100 100 0	67 88 5	86 95 4
145	27309	Phosphonodithioic acid, ethyl-, S-(4-chloro-m-tolyl) O-methyl ester	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 95 35	100 100 100 100 93 42	100 100 100 100 97 28	100 82 74 35 6 4	100 91 100 55 10 2	100 62 52 31 2 9
146	27298	Phosphonodithioic acid, ethyl-, S-[(2,4-dichlorophenoxy)methyl] O-ethyl ester	5.0 2.5 1.25	100 87 0	100 74 4	100 80 2	100 96 36	100 74 0	100 83 17
147	27361	Phosphonodithioic acid, ethyl-, S-[(2,4-dichlorophenoxy)methyl] O-propyl ester	5.0 2.5 1.25	100 62 30	100 78 33	100 43 25	100 83 0	100 86 0	100 80 0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly			House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent	Total insects Percent
148	27013	Phosphonodithioic acid, ethyl-, O-ethyl ester, S-ester with N-(2-mercaptoethyl)dimethanesulfonamide	5.0	0	0	0	0	0	0
149	27038	Phosphonodithioic acid, ethyl-, O-ethyl ester, S-ester with 2-[(mercaptomethyl)thio]-N-methylacetamide	5.0	100	100	100	78	33	54
			2.5	100	79	88	54	20	39
			1.25	76	34	55	77	6	41
			.625	0	0	0	0	3	2
150	27015	Phosphonodithioic acid, ethyl-, O-isobutyl ester S-ester with N-(mercapto-methyl)phthalimide	5.0	100	100	100	100	100	100
			2.5	100	100	100	71	57	63
			1.25	100	93	96	13	4	8
			.625	50	50	50	0	0	0
151	27014	Phosphonodithioic acid, ethyl-, O-isobutyl ester, S-ester with N-(mercapto-methyl)phthalimide	5.0	100	100	100	92	71	83
			2.5	100	100	100	100	58	77
			1.25	100	100	100	87	24	65
			.625	39	10	27	36	0	11
152	27249	Phosphonodithioic acid, ethyl-, O-methyl S-phenyl ester	5.0	100	100	100	100	67	89
			2.5	92	97	94	25	24	24
			1.25	4	7	5	6	0	4
153	27250	Phosphonodithioic acid, ethyl-, O-methyl S-p-tolyl ester	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	92	95
			1.25	100	100	100	82	52	68
			.625	95	92	93	(insects escaped)		
			.312	9	0	4	0	0	0
154	27661	Phosphonodithioic acid, (2-methoxyvinyl)-, S,S-diisopropyl ester	5.0	100	100	100	100	91	96
			2.5	95	48	63	25	6	12
			1.25	23	5	12	15	0	3
155	27372	Phosphonodithioic acid, methyl-, O-benzo[b]thien-4-yl S-propyl ester	5.0	4	0	10	2	5	0
156	27406	Phosphonodithioic acid, methyl-, S-(4-chloro-m-tolyl) O-ethyl ester	5.0	68	45	56	82	82	82
			2.5	14	4	8	84	62	70
			1.25	3	2	3	0	17	6
157	27227	Phosphonothioic acid, (chloromethyl)-, O-ethyl ester, O-ester with 4-hydroxy-m-anisonitrile	5.0	95	61	75	10	0	3
			2.5	62	18	39	43	0	8
			1.25	20	4	11	0	0	0
158	27028	Phosphonothioic acid, (chloromethyl)-, O-ethyl ester, O-ester with p-hydroxybenzonitrile	5.0	100	100	100	100	100	100
			2.5	97	100	99	100	96	98
			1.25	100	100	100	100	82	94
			.625	100	97	98	78	13	44
			.312	38	4	17	20	0	15
159	27373	Phosphonothioic acid, ethyl-, O-(4-bromo-2,5-dichlorophenyl) O-ethyl ester	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			1.25	100	100	100	100	100	100
			.625	100	100	100	84	92	79
			.312	100	100	100	82	93	75
			.156	100	100	100	15	57	0
			.078	88	90	86	4	0	7
			.039	0	0	0	0	0	0
160	27374	Phosphonothioic acid, ethyl-, O-(4-bromo-2,5-dichlorophenyl) O-methyl ester	5.0	100	100	100	100	100	100
			2.5	100	00	100	100	100	100
			1.25	100	100	100	100	100	100
			.625	100	100	100	95	95	96
			.312	100	100	100	86	91	80
			.156	100	100	100	52	62	38
			.078	92	95	87	0	0	0
			.039	0	0	0	0	0	0

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill					
			Residue Mg. per 929 cm. ²	Face fly		House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent
161	25869	Phosphonothioic acid, ethyl-, O-(2-chloroethyl) ester, O-ester with p-hydroxybenzo- nitrile	5.0 2.5 1.25 .625 .312 .156	100 100 100 97 0 6	100 100 75 75 0 0	100 100 89 88 0 3	100 100 100 79 81 12	100 100 100 30 26 0
162	27513	Phosphonothioic acid, ethyl-, O-ethyl ester, O-ester with p-hydroxybenzaldehyde O- (methylcarbamoyl)oxime	10.0	29	23	27	52	21
163	27375	Phosphonothioic acid, methyl-, O-(4-bromo-2,5-dichloro- phenyl) O-isopropyl ester	5.0 2.5 1.25 .625 .312 .156 .078	100 98 100 100 100 86 5	100 100 100 100 100 100 5	100 95 100 100 100 72 5	90 100 100 90 39 4 3	100 100 100 100 67 9 0
164	27453	Phosphonothioic acid, methyl-, O-(4-bromo-2,5-dichloro- phenyl) O-propyl ester	5.0 2.5 1.25 .625 .312 .156 .078	100 100 100 100 100 83 17	100 100 100 100 100 79 6	100 100 100 100 100 81 11	100 100 100 97 76 14 0	100 100 100 40 67 0 0
165	27634	Phosphonothioic acid, methyl-, O-[2,5-dichloro-4-(methyl- thio)phenyl] O-ethyl ester	5.0 2.5 1.25 .625 .312 .156 .078 .039 .020	100 100 100 100 100 100 100 61 0	100 100 100 100 100 100 83 68 0	100 100 100 100 100 100 93 65 0	100 100 100 100 100 100 55 0 0	100 100 100 100 92 74 3 0 0
166	27033	Phosphonothioic acid, methyl-, O-ethyl ester, O-ester with p-hydroxybenzonitrile	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 100 0	100 100 100 100 100 0	100 100 100 100 100 0	100 100 100 100 100 0	100 100 100 100 100 0
167	27378	Phosphonothioic acid, phenyl-, O-(4-bromo-2,5-dichloro- phenyl) O-methyl ester	5.0 2.5 1.25 .625	100 99 100 0	100 100 100 0	100 98 100 0	100 100 62 0	100 100 84 0
168	27396	Phosphoramidothioic acid, O,S- dimethyl ester	5.0 2.5 1.25 .625 .312 .156 .078	100 100 100 89 81 14 0	100 100 100 53 47 9 0	100 100 100 70 64 12 0	100 100 100 93 100 100 11	100 100 96 32 0 26 0
169	27084	Phosphoramidothioic acid, diethyl-, cyclic O,O-(2,2- dimethyltrimethylene) ester	5.0	0	0	0	0	0
170	27023	Phosphoramidothioic acid, [ethyl(2-hydroxyethyl)thio- carbamoyl]-, O,O-dimethyl ester	5.0	3	0	2	0	0
171	27034	Phosphoramidothioic acid, [ethyl(2-hydroxypropyl)thio- carbamoyl]-, O,O-dimethyl ester	5.0	3	0	2	0	0

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly			House fly		
				Male	Female	Total insects	Male	Female	Total insects
172	27239	Phosphoramidothioic acid, [(2-hydroxyethyl)methylthio-carbamoyl]-, 0,0-dimethyl ester	5.0	0	0	0	4	0	2
173	27032	Phosphoramidothioic acid, [(2-hydroxyethyl)propylthio-carbamoyl]-, 0,0-dimethyl ester	5.0	3	0	1	0	0	0
174	27035	Phosphoramidothioic acid, [2-hydroxypropyl)methylthio-carbamoyl]-, 0,0-dimethyl ester	5.0	3	0	1	0	0	0
175	27019	Phosphoric acid, 1-(2-bromo-4,5-dichlorophenyl)-2-chloro-vinyl dimethyl ester	5.0 2.5 1.25 .625 .312	100 100 100 85 14	100 100 100 64 4	100 100 100 75 10	100 100 25 0 72	100 49 0 0 0	100 64 12 0 33
176	27021	Phosphoric acid, 1-(4-bromo-2,5-dichlorophenyl)-2-chloro-vinyl dimethyl ester	5.0 2.5 1.25 .625 .312	100 100 88 75 19	100 100 60 60 7	100 100 73 67 15	100 95 0 0 0	93 24 0 0 6	96 47 0 0 3
177	27043	Phosphoric acid, 2-bromo-1-(2,4-dichlorophenyl)vinyl dimethyl ester	5.0 2.5 1.25 .625 .312	100 100 100 100 38	100 100 94 67 20	100 100 97 84 28	100 100 43 33 33	100 100 50 12 0	100 100 47 25 12
178	27500	Phosphoric acid, 6-chloro-bicyclo[3.2.0]hepta-2,6-dien-7-yl dimethyl ester	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 75 0	100 100 100 97 46 4	100 100 100 98 62 2	100 100 100 95 17 0	100 100 29 67 0 0	100 100 71 87 12 0
179	25840	Phosphoric acid, 2-chloro-1-(2,4-dibromophenyl)vinyl dimethyl ester	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 70 35	100 100 100 100 63 15	100 100 100 100 67 28	100 100 86 46 93 0	100 100 63 9 58 0	100 100 71 29 71 0
180	24969	Phosphoric acid, 2-chloro-1-(2,4-dichlorophenyl)vinyl diethyl ester	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 100 13	100 100 100 90 100 12	100 100 100 94 100 13	100 100 100 8 20 0	100 100 100 0 0 0	100 100 100 5 9 0
181	25818	Phosphoric acid, 2-chloro-1-(2,4-dichlorophenyl)vinyl dimethyl ester	5.0 2.5 1.25 .625 .312 .156 .078	100 100 100 100 100 70 9	100 100 100 100 100 87 11	100 100 100 100 100 81 10	100 100 100 67 91 3 21	100 100 100 22 43 0 6	100 100 100 41 72 2 15
182	27018	Phosphoric acid, 2-chloro-1-(2,5-dichlorophenyl)vinyl dimethyl ester	5.0 2.5 1.25	100 100 58	100 78 39	100 87 45	0 0 0	0 0 0	0 0 0
183	25842	Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)vinyl diethyl ester	5.0 2.5 1.25 .625 .312 .156	100 100 79 100 86 24	100 100 83 92 71 22	100 100 81 97 78 23	16 26 100 23 87 0	0 0 59 0 10 0	10 14 80 15 48 0

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill						
			Residue Mg. per 929 cm. ²	Face fly			House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent	Total insects Percent
184	25841	Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl ester (Gardona(R))	5.0 2.5 1.25 .625	100 95 100 27	100 93 96 40	100 94 98 32	0 20 91 55	0 0 7 0	0 11 45 27
185	24988	Phosphoric acid, 1,2-dibromo-2,2-dichloroethyl dimethyl ester (Naled)	2/10.0 1/ 5.0 1/ 2.5 1/ 1.25 1/ .625 1/ .312	100 100 100 100 100 32	100 100 100 100 100 16	100 100 100 100 100 24	100 100 100 87 100 12	100 100 100 20 86 0	100 100 100 66 95 6
186	20738	Phosphoric acid, 2,2-dichloro-vinyl dimethyl ester (dichlorvos)	5.0 2.5 1.25 .625 .312 .156	100 89 85 76 4 17	100 54 90 85 18 22	100 78 86 79 10 20	100 0 4 10 0 15	100 0 0 0 6 0	100 0 3 8 3 4
187	27663	Phosphoric acid, 2,2-dichloro-vinyl methyl ester, calcium salt, compound with dichlorvos (1:2)	5.0 2.5 1.25 .625 .312	100 100 100 100 0	100 100 96 100 0	100 100 98 100 0	100 100 100 7 0	100 100 100 0 0	100 100 100 4 0
188	27626	Phosphoric acid, diethyl ester, ester with <u>o</u> -tolylglyoxylonitrile oxime	5.0 2.5 1.25	100 100 23	100 100 32	100 100 26	85 78 14	50 37 12	72 60 13
189	27129	Phosphoric acid, dimethyl ester, ester with 3-hydroxy- <u>N</u> -methylcrotonamide, (<u>E</u>)-(monocrotophos)	5.0 2.5 1.25	100 100 61	94 100 12	97 100 37	100 100 85	94 91 15	97 95 45
190	27521	Phosphoric acid, dimethyl 3,5,6-trichloro-2-pyridyl ester	5.0 2.5 1.25 .625 .312	100 100 97 92 16	100 94 83 40 20	100 96 88 55 18	88 93 100 90 68	88 69 83 30 2	88 80 85 47 29
191	27269	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with <u>N</u> -(2-bromo-1-mercaptoethyl)-phthalimide	5.0 2.5 1.25	97 97 0	100 95 0	99 96 0	0 26 9	3 0 2	2 12 5
192	27650	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with 3-(2-chloro-1-mercaptoethyl)-2-benzoxazolinone	5.0 2.5	100 48	98 38	99 44	56 0	22 0	47 0
193	27320	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with <u>N</u> -(2-chloro-1-mercaptoethyl)-phthalimide (dialifor)	5.0 2.5 1.25 .625	100 58 79 0	100 45 81 0	100 51 80 0	97 100 0 0	47 38 0 0	75 71 0 0
194	27312	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with <u>N</u> -(2-cyanoethyl)-2-mercaptoacetanilide	5.0	5	3	6	9	19	0
195	27211	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with dihydro-3-mercapto-2(3H)-furanone	5.0 2.5 1.25	100 100 26	100 59 0	100 76 12	75 16 0	54 0 0	64 9 0
196	27707	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with 4-(mercaptomethyl)-2-methoxy-Δ ² -1,3,4-thiadiazolin-5-one	5.0 2.5 1.25 .625 .312	100 100 100 86 0	100 100 98 37 0	100 100 98 52 0	94 100 100 87 2	96 98 93 47 0	95 99 94 55 1

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill					
			Residue Mg. per 929 cm. ²	Face fly		House fly		
				Male Percent	Female Percent	Total insects		Total insects
						Male Percent	Female Percent	
197	27295	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with 3-(mercaptomethyl)-2,4-thiazolidinedione	5.0 2.5	100 59	100 36	100 48	100 0	85 0
198	27070	Phosphorodithioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with mercapto-2-propanone, diethyl mercaptole	5.0 2.5 1.25 .625	100 100 100 10	100 100 33 12	100 100 70 11	100 32 9 0	100 7 0 0
199	27653	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 1-acetyl-3-(mercaptomethyl)-5,5-dimethylhydantoin	5.0	3	6	5	10	0
200	27652	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 1-acetyl-3-(mercaptomethyl)-hydantoin	5.0	28	31	30	0	7
201	27268	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with <u>N</u> -(2-bromo-1-mercaptoethyl)-phthalimide	5.0 2.5 1.25	97 95 0	88 72 0	93 84 0	0 5 0	0 2 0
202	27321	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with <u>N</u> -(2-chloro-1-mercaptoethyl)-phthalimide	5.0	65	36	49	34	0
203	27238	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 2-ethoxy-4-(mercaptomethyl)- Δ^2 -1,3,4-thiadiazolin-5-one	5.0 2.5 1.25 .625 .312	100 100 100 100 45	100 100 100 96 46	100 100 100 98 46	100 90 83 53 3	100 78 54 5 0
204	23233	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 3-(mercaptomethyl)-1,2,3-benzotriazin-4(3H)-one (azinphosmethyl)	5.0 2.5 1.25 .625	100 100 96 48	100 94 79 22	100 97 89 36	10 0 0 0	4 0 0 0
205	27193	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 4-(mercaptomethyl)-2-methoxy- Δ^2 -1,3,4-thiadiazolin-5-one	5.0 2.5 1.25 .625 .312	100 100 100 84 50	100 100 92 76 34	100 100 98 80 41	93 97 40 9 0	71 74 21 0 0
206	27615	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 3-(mercaptomethyl)-1-methyl-hydantoin	5.0 2.5	0 0	0 0	0 0	94 6	33 0
207	25872	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with <u>N</u> -(mercaptomethyl)succinimide	5.0 2.5 1/1.25 1/.625	100 100 100 63	100 100 100 55	100 100 100 59	83 69 18 22	41 50 8 0
208	27296	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 3-(mercaptomethyl)-2,4-thiazolidinedione	5.0 2.5	90 4	78 0	83 2	0 5	0 3
209	27072	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with mercapto-2-propanone, diethyl mercaptole	5.0 2.5	100 59	100 24	100 43	56 0	8 0
210	24650	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl <u>S</u> -[(methylcarbamoyl)-methyl] ester (dimethoate)	5.0 2.5 1/1.25 1/.625 1/.312 1/.156 1/.078	100 100 100 99 100 80 40	100 100 98 100 82 44 22	100 100 99 99 92 59 29	100 100 100 100 69 24 3	100 80 100 62 16 15 0
211	27073	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl <u>S</u> -[(2-methyl-1,3-dithiolan-2-yl)methyl] ester	5.0 2.5	6 0	0 0	3 0	0 0	0 3

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill				
				Face fly		House fly		
				Male	Female	Total insects	Male	Female
				Percent	Percent	Percent	Percent	Percent
212	27071	Phosphorodithioic acid, <u>O</u> , <u>O</u> -dimethyl <u>S</u> -[(2-methyl-1,3-oxathiolan-2-yl)methyl] ester	5.0	100	81	90	36	0
			2.5	74	79	76	0	0
			1.25	8	4	6	0	0
213	27123	Phosphorodithioic acid, <u>S</u> -(4,6-dimethyl-2-pyrimidinyl) <u>O</u> -ethyl <u>O</u> -isopropyl ester	5.0	100	100	100	100	96
			2.5	100	100	100	96	86
			1/1.25	100	100	100	54	44
			1/ .625	59	54	60	50	10
214	27122	Phosphorodithioic acid, <u>S</u> -(4,6-dimethyl-2-pyrimidinyl) <u>O</u> -ethyl <u>O</u> -propyl ester	5.0	100	100	100	100	100
			2.5	100	100	100	90	83
			1/1.25	100	100	100	25	5
			1/ .625	100	98	99	42	12
			.312	31	10	16	13	0
215	27318	Phosphorodithioic acid, <u>O</u> -ethyl <u>S</u> , <u>S</u> -dipropyl ester (Mocap(R))	5.0	93	100	96	100	95
			2.5	77	93	85	0	0
			1.25	0	0	0	0	0
216	25866	Phosphorodithioic acid, <u>O</u> -ethyl <u>O</u> -isopropyl ester, <u>S</u> -ester with <u>N</u> -(mercapto-methyl)phthalimide	10.0	100	100	100	4	0
			5.0	100	100	100	0	0
			2.5	43	50	46	-	-
			1.25	64	60	62	0	0
			.625	80	60	72	0	0
			.312	62	33	44	0	0
			.156	3	0	2	0	0
217	25865	Phosphorodithioic acid, <u>O</u> -ethyl <u>O</u> -methyl ester, <u>S</u> -ester with <u>N</u> -(mercapto-methyl)phthalimide	10.0	100	100	100	100	100
			5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	42	32
			.625	100	100	100	94	56
			.312	100	100	100	80	81
			.156	96	95	95	0	0
			.078	9	9	9	17	0
218	25864	Phosphorodithioic acid, <u>O</u> -ethyl <u>O</u> -propyl ester, <u>S</u> -ester with <u>N</u> -(mercaptomethyl)-phthalimide	10.0	100	100	100	100	100
			5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	62	23
			.625	100	100	100	100	85
			.312	100	100	100	33	53
			.156	85	73	80	4	0
219	27207	Phosphorodithioic acid, <u>S</u> -(hydroxymethyl) <u>O</u> , <u>O</u> -dimethyl ester, acetate	5.0	0	0	0	0	0
220	25867	Phosphorodithioic acid, <u>O</u> -isopropyl <u>O</u> -methyl ester, <u>S</u> -ester with <u>N</u> -(mercapto-methyl)phthalimide	10.0	100	100	100	96	67
			5.0	100	100	100	67	7
			2.5	100	100	100	69	24
			1.25	100	100	100	16	0
			.625	100	100	100	15	0
			.312	100	90	95	0	0
			.156	100	81	92	0	0
221	25863	Phosphorodithioic acid, <u>O</u> -methyl <u>O</u> -propyl ester, <u>S</u> -ester with <u>N</u> -(mercapto-methyl)phthalimide	.078	9	0	4	11	0
222	27030	Phosphoro(monothioi)peroxoic acid, <u>SO</u> -(2,4-dinitrophenyl) <u>O</u> , <u>O</u> -diethyl ester	5.0	5	8	6	0	0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill						
			Residue	Face fly			House fly		
				Male	Female	Total	Male	Female	Total
			Mg. per 929 cm. ²	Percent	Percent	Percent	Percent	Percent	Percent
223	27031	Phosphoro(monothio)peroxoic acid, <u>SO</u> -(3,5-dinitro- <u>o</u> -tolyl) <u>O</u> , <u>O</u> -diethyl ester	5.0	100	100	100	71	45	57
			2.5	100	100	100	73	24	51
			1.25	86	83	85	10	0	7
			.625	4	3	3	0	0	0
224	27162	Phosphorothioic acid, <u>O</u> -(4-bromo-2,5-dichlorophenyl) <u>O</u> , <u>O</u> -dimethyl ester (bromophos)	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			<u>1</u> /1.25	100	100	100	100	90	93
			<u>1</u> / .625	100	100	100	100	74	86
			.312	100	100	100	20	5	8
			.156	80	54	71	60	13	25
			.078	100	50	71	3	11	6
			.039	81	75	78	0	0	0
			.020	11	7	9	0	0	0
			225	27607	Phosphorothioic acid, <u>O</u> -(3-bromo-5,7-dimethylpyrazolo-[1,5- <u>α</u>]pyrimidin-2-yl) <u>O</u> , <u>O</u> -diethyl ester	5.0	100	100	100
2.5	93	58				72	8	0	6
1.25	40	20				29	20	0	9
226	27464	Phosphorothioic acid, <u>O</u> -(7-chloro-4-benzofurazanyl) <u>O</u> -isopropyl <u>O</u> -methyl ester	10.0	100	100	100	100	100	100
			5.0	100	100	100	100	92	96
			<u>3</u> / 2.5	100	100	100	100	100	100
			1.25	100	100	100	100	95	97
			.625	85	54	64	20	16	18
			.312	24	7	14	2	0	1
227	27608	Phosphorothioic acid, <u>O</u> -(3-chloro-5,7-dimethylpyrazolo-[1,5- <u>α</u>]pyrimidin-2-yl) <u>O</u> , <u>O</u> -diethyl ester	5.0	100	100	100	36	19	30
			2.5	67	38	48	17	0	12
228	27409	Phosphorothioic acid, <u>O</u> -(2,5-dichloro-4-iodophenyl) <u>O</u> , <u>O</u> -diethyl ester	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			1.25	100	100	100	96	92	94
			.625	100	94	98	96	52	77
			.312	79	53	65	10	0	4
			.156	5	4	5	0	0	0
229	27408	Phosphorothioic acid, <u>O</u> -(2,5-dichloro-4-iodophenyl) <u>O</u> , <u>O</u> -dimethyl ester	5.0	100	100	100	100	100	100
			2.5	88	86	87	100	90	94
			1.25	100	100	100	85	89	87
			.625	100	100	100	65	15	47
			.312	100	100	100	17	0	6
			.156	70	9	37	0	0	0
230	27569	Phosphorothioic acid, <u>O</u> -(2,5-dichloro-4-iodophenyl) <u>O</u> -ethyl <u>O</u> -methyl ester	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	90	94
			1.25	100	100	100	100	87	90
			.625	96	82	87	88	37	47
			<u>1</u> / .312	42	19	30	84	31	60
			.156	28	0	11	10	6	8
231	27635	Phosphorothioic acid, <u>O</u> -[2,5-dichloro-4-(methylthio)phenyl] <u>O</u> , <u>O</u> -diethyl ester	5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			1.25	100	100	100	100	100	100
			.625	100	100	100	97	100	98
			.312	100	100	100	96	93	95
			.156	48	52	50	72	7	42
232	27698	Phosphorothioic acid, <u>O</u> -[2-(diethylamino)-6-methyl-4-pyrimidinyl] <u>O</u> , <u>O</u> -diethyl ester	.078	19	11	15	29	5	13
			5.0	100	100	100	100	81	87
			2.5	100	100	100	100	97	98
			1.25	100	100	100	100	89	90
			.625	100	100	100	93	80	82
			.312	97	80	88	21	2	13
			.156	37	10	23	6	3	4

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Entomology			24-hour kill						
			Face fly			House fly			
			Residue	Male	Female	Total	Male	Female	Total
Item No.	No. (ENT-)	Material	Mg. per 929 cm. ²	Percent	Percent	Percent	Percent	Percent	Percent
233	27699	Phosphorothioic acid, <u>O</u> -[2-(diethylamino)-6-methyl-4-pyrimidinyl] <u>O</u> , <u>O</u> -dimethyl ester	5.0	100	100	100	100	98	99
			2.5	100	100	100	100	100	100
			1.25	100	100	100	100	93	94
			.625	100	100	100	91	95	94
			.312	100	100	100	80	31	56
			.156	97	95	96	84	18	56
			.078	93	68	80	53	8	33
234	27449	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with (<u>o</u> -chlorophenyl)glyoxylonitrile oxime (chlorphoxim)	.039	14	0	8	5	3	4
			5.0	100	100	100	100	100	100
			2.5	100	100	100	91	82	88
			1.25	100	100	100	93	86	89
			.625	100	100	100	70	24	50
			.312	100	97	98	44	5	27
			.156	67	30	43	0	0	0
235	27485	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with (2,6-dichlorophenyl)glyoxylonitrile oxime, α -isomer	.078	0	0	0	0	0	0
			10.0	100	100	100	40	0	11
			5.0	100	95	97	44	40	44
			2.5	100	100	100	0	0	0
			1.25	88	27	57	22	0	9
236	27469	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with (2,6-dichlorophenyl)glyoxylonitrile oxime, β -isomer	.625	48	40	43	0	0	0
			10.0	100	100	100	100	100	100
			5.0	100	100	100	100	100	100
			2.5	100	100	100	100	100	100
			1.25	100	100	100	96	88	91
			.625	100	100	100	18	0	5
237	27333	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>S</u> -ester with dihydro-3-mercapto-2(3H)-furanone	<u>1/</u> .312	18	18	18	6	1	1
			5.0	35	34	35	5	12	0
			10.0	100	100	100	95	90	94
			5.0	61	54	57	7	9	8
			2.5	52	65	60	0	0	0
238	27543	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with 4'-hydroxyacetophenone <u>O</u> -(butylcarbamoyl)oxime	1.25	55	24	36	3	0	2
			10.0	100	100	100	95	82	91
			5.0	96	94	95	90	88	89
			2.5	92	52	74	8	4	6
239	27542	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with 4'-hydroxyacetophenone <u>O</u> -(methylcarbamoyl)oxime	1.25	0	0	0	0	0	0
			10.0	0	4	2	0	0	0
			5.0	100	95	97	11	25	16
			2.5	100	91	95	68	29	48
240	27507	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with <u>p</u> -hydroxybenzaldehyde <u>O</u> -(allylcarbamoyl)oxime	1.25	12	6	10	0	0	0
			5.0	0	0	0	0	0	0
			10.0	100	100	100	100	100	100
241	27508	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with <u>p</u> -hydroxybenzaldehyde <u>O</u> -(butylcarbamoyl)oxime	2.5	100	95	97	11	25	16
			5.0	100	91	95	68	29	48
			1.25	12	6	10	0	0	0
			5.0	0	0	0	0	0	0
			10.0	100	100	100	100	100	100
			2.5	100	100	100	97	88	92
242	27506	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with <u>p</u> -hydroxybenzaldehyde <u>O</u> -(methylcarbamoyl)oxime	1.25	100	100	100	50	46	48
			5.0	100	100	100	80	52	67
			10.0	100	95	97	6	3	4
			2.5	100	95	97	6	3	4
			.312	100	95	97	6	3	4
			.156	26	17	23	41	0*	15
243	27144	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with 3-hydroxycoumarin	1.25	100	100	100	50	46	48
			5.0	100	100	100	80	52	67
			10.0	100	95	97	6	3	4
244	27544	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with 4'-hydroxy-2'-methylacetophenone oxime N-acetate	.156	26	17	23	41	0*	15
			5.0	82	72	73	9	4	7
			2.5	12	10	11	10	2	5

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill					
			Face fly			House fly		
			Residue	Male	Female	Total	Male	Female
			Mg. per 929 cm. ²	Percent	Percent	insects	Percent	Percent
245	27448	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl ester, <u>O</u> -ester with phenylglyoxylonitrile oxime (phoxim)	5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	100	87
			.625	100	100	100	79	71
			.312	100	100	100	88	48
			.156	100	100	100	15	3
			.078	20	26	24	0	0
246	19507	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl <u>O</u> -(2-isopropyl-6-methyl-4-pyrimidinyl) ester (diazinon)	2/10.0	100	100	100	100	100
			1/ 5.0	100	100	100	100	100
			1/ 2.5	100	100	100	100	100
			1/ 1.25	94	100	98	80	54
			1/ .625	100	100	100	48	31
			1/ .312	92	91	92	0	0
			1/ .156	47	42	44	8	0
247	27311	Phosphorothioic acid, <u>O</u> , <u>O</u> -diethyl <u>O</u> -(3,5,6-trichloro-2-pyridyl) ester (Dursban ^(R))	5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	100	100
			.625	100	100	100	100	92
			.312	100	100	100	100	93
			.156	100	93	96	3	0
			.078	90	65	81	0	3
248	27465	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>O</u> -ester with <u>N</u> -benzyl-4-hydroxyphthalimide	.039	75	25	37	3	0
			5.0	100	100	100	95	45
			2.5	100	100	100	100	92
			1.25	100	100	100	100	100
			.625	100	100	100	95	85
			.312	94	68	82	95	54
			.156	80	76	78	92	48
249	27230	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>O</u> -ester with 4-hydroxy- <u>m</u> -anisonitrile	1/ .156	100	73	86	70	6
			.078	0	0	0	0	0
			5.0	97	100	93	0	0
			2.5	100	100	100	4	8
			1.25	67	96	49	3	5
			.625	69	75	58	5	8
			.312	4	2	6	0	0
250	27618	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl ester, <u>S</u> -ester with 3-(mercaptomethyl)-1-methyl-hydantoin	5.0	60	83	76	50	0
			2.5	33	33	33	7	0
251	25540	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl <u>O</u> -[4-(methylthio)- <u>m</u> -tolyl] ester (fenthion)	5.0	100	100	100	100	82
			2.5	100	96	98	100	94
			1.25	54	24	40	50	0
			.625	85	34	58	12	0
			.312	29	4	14	12	0
252	25715	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl <u>O</u> -(4-nitro- <u>m</u> -tolyl) ester (BAY-41831)	5.0	100	100	100	100	100
			2.5	100	100	100	100	81
			1.25	100	100	100	100	95
			.625	100	81	91	43	7
			.312	100	88	94	80	40
			.156	77	27	54	4	2
			.078	72	33	54	0	0
253	27491	Phosphorothioic acid, <u>O</u> -(5,6-dimethyl-2-pyrazinyl) <u>O</u> , <u>O</u> -dimethyl ester	.039	0	0	0	0	0
			5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	100	100
			.625	100	100	100	92	64
			.312	100	94	97	18	0
			.156	64	74	68	50	0
254	23284	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl <u>O</u> -(2,4,5-trichloro-phenyl) ester (ronnel)	.078	71	81	76	9	0
			.039	9	2	4	0	0
			5.0	100	100	100	100	100
			2.5	100	100	100	100	100
			1.25	100	100	100	100	100
			.625	97	96	96	78	56
			.312	100	90	94	19	8
254	23284	Phosphorothioic acid, <u>O</u> , <u>O</u> -dimethyl <u>O</u> -(2,4,5-trichloro-phenyl) ester (ronnel)	1/ .156	30	22	26	13	0
			.078	9	2	4	0	0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	Residue Mg. per 929 cm. ²	24-hour kill					
				Face fly			House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent	Total insects Percent
255	27248	Phosphorothioic acid, O-isopropyl O-methyl O-(p-nitrophenyl) ester	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 100 32	100 100 100 100 100 23	100 100 100 100 100 22	100 100 100 96 91 21	100 100 88 81 71 0	100 100 95 88 82 10
256	27326	Phosphorothioic acid, O-[3-(isopropylthio)-4-nitrophenyl] O,O-dimethyl ester	5.0 2.5 1.25	100 100 12	100 98 2	100 99 6	20 12 0	0 0 0	3 4 0
257	27501	Phthalazine, compound with bromine (1:1)	5.0	12	0	6	0	0	0
258	27502	Phthalazine, 1,4-dichloro-, compound with bromine (1:1)	5.0	5	0	2	0	0	0
259	27505	Phthalazine, 1,4-diiodo-	5.0	5	3	4	4	8	6
260	27503	1-Phthalazinecarbonitrile	5.0	7	0	5	0	0	0
261	27504	1,4-Phthalazinedicarbonitrile	5.0	11	4	8	0	4	2
262	27541	4-Pipecoline, 1-decyl-	5.0	0	0	0	0	0	0
263	27529	Piperidine, 1-decyl-	5.0	0	0	0	0	0	0
264	27533	Piperidine, 1-(5,5,7,7-tetramethyl-2-octenyl)-	5.0	6	0	2	3	0	2
265	28344	Piperonal, bis[2-(2-butoxyethoxy)ethyl] acetal	5.0	0	2	1	1	3	2
266	27232	Propane, 1,1,2,2,3-penta-chloro-1,3,3-trifluoro-	5.0	0	0	0	0	0	0
267	27231	Propane, 1,2,2,3-tetra-chloro-1,1,3,3-tetrafluoro	5.0	7	3	5	4	0	2
268	27528	Pyridine, 2-(2-methoxyethoxy)-	5.0	0	0	0	0	0	0
269	27516	Pyrocatechol, cyclic sulfite	5.0	0	0	0	0	0	0
270	33432	Pyrrolidine, 3-hexadecyl-2-methyl-, <u>cis</u> -	5.0	0	0	0	0	0	0
271	27658	Salicylic acid, isopropyl ester, O-ester with O-ethyl phosphoramidothioate	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 100 26	100 100 100 100 100 16	100 100 100 100 100 21	100 100 100 95 100 50	100 100 100 28 65 3	100 100 100 52 86 21
272	27659	Salicylic acid, isopropyl ester, O-ester with O-methyl phosphoramidothioate	5.0 2.5 1.25 .625 .312 .156	100 100 100 100 100 47	100 100 100 100 100 27	100 100 100 100 100 38	100 100 100 100 100 0	100 100 100 100 100 0	100 100 100 100 100 0
273	19442-X	Strobane, a mixture of terpene polychlorinates containing about 65 percent chlorine (Strobane(R))	2/10.0 1/ 5.0	72 28	70 20	71 25	89 13	56 7	74 11
274	27476	Succinic acid, mercapto-, bis(methylthio)methyl ester, S-ester with O,O-diethyl phosphorodithioate	10.0 5.0 2.5 1.25	100 100 100 67	100 100 100 10	100 100 100 46	100 22 67 6	100 5 32 0	100 10 40 2
275	27009	Succinic acid, mercapto-, diethyl ester, S-ester with O-ethyl ethylphosphonodithioate	5.0 2.5 1.25 .625	100 100 96 33	100 100 81 17	100 100 88 25	100 100 45 0	82 89 0 0	93 96 22 0

See footnotes at end of table.

Table 1.--Comparative effectiveness of materials evaluated as insecticide residues against face flies and DDT-resistant house flies. Single test at each dosage level--Continued

Item No.	Entomology No. (ENT-)	Material	24-hour kill					
			Residue Mg. per 929 cm ²	Face fly		House fly		
				Male Percent	Female Percent	Total insects Percent	Male Percent	Female Percent
276	27534	Sulfurous acid, diphenyl ester	5.0	7	3	5	4	0
277	26662-X	Tetradecanamide, N,N-dimethyl- (95 percent), mixture with related amides (5 percent)	5.0	0	0	0	0	0
278	27523	1,2,7-Thiadiazepine, hexahydro-2,4,4,5,5,7-hexamethyl-, 1-oxide	5.0	0	0	0	0	0
279	27525	Thiocyanic acid, 2-methyl-1-naphthyl ester	5.0	0	0	0	0	0
280	27024	Thioperoxyphosphoric acid, 0,0-diethyl S0-[2-(ethylthio)-ethyl] ester	5.0	0	14	8	0	0
281	33253	Thiophene-3-ol, tetrahydro-, carbanilate, 1,1-dioxide	5.0	0	0	0	0	0
STANDARDS								
Number of tests	17034	S-[1,2-bis(ethoxycarbonyl)ethyl] 0,0-dimethyl phosphorodithioate (malathion)	10	98.2	100	99.4	89.6	77.0
30			5	99.6	98.3	98.8	77.6	47.5
25			2.5	88.8	82.3	85.5	44.9	12.5
27			1.25	56.6	52.2	54.3	20.1	7.1
25			.625	13.2	6.8	10.0	4.6	1.3
19			.312	2.1	1.7	1.8	1.0	.5
15			.156	3.1	1.0	2.2	1.4	1.6
10			.078	0	0	0	.8	0
8			.039	1.2	1.6	1.7	.4	.4
3			.020	.7	.7	.7	2.3	0
			.010	0	0	0	0	0
15	1506	1,1,1-trichloro-2,2-bis (p-chlorophenyl)ethane (DDT)	10	98.6	94.0	96.0	24.1	13.9
40			5	99.2	91.3	97.6	28.7	16.4
40			2.5	82.1	58.4	69.3	22.9	9.7
37			1.25	50.7	33.5	41.8	11.0	6.3
32			.625	24.4	8.5	15.6	6.7	2.7
19			.312	15.2	7.4	11.8	1.5	1.2
17			.156	2.5	.6	1.9	1.4	.5
12			.078	1.0	.6	.8	.7	.5
9			.039	3.1	3.2	3.1	2.0	0
4			.020	.5	.5	.5	2.5	1.0
			.010	0	4.0	2.0	0	0

1/ Average 2 tests.

2/ Average 3 tests.

3/ Average 4 tests.

4/ Mobam^(R) gave erratic results varying from no kill to 100 percent. Unpublished data indicate that aged residues of Mobam^(R) in acetone may be more effective than a fresh residue.

Washington, D.C.

U. S. GOVERNMENT PRINTING OFFICE : 1971 O - 423 - 983

Issued September 1971

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